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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,580	12/30/2005	Nobuo Kimura	20241/0202878-US0	1723
7278	7590	09/10/2009	EXAMINER	
DARBY & DARBY P.C.			KATZ, VERA	
P.O. BOX 770				
Church Street Station			ART UNIT	PAPER NUMBER
New York, NY 10008-0770			1794	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/533,580	<b>Applicant(s)</b> KIMURA ET AL.	
	<b>Examiner</b> Vera Katz	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,13-15,23-29,43,44,54-56,58,65 and 67 is/are pending in the application.
- 4a) Of the above claim(s) 54-56,58,65 and 67 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 13-15, 23-29, 43-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/16/09 has been entered.

### ***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 13-15, 23-25 and 43-44 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Toki

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(WO2003-014022); the rejection below is based on its English language US national stage published application No. 2004/0197254. Toki teaches a dispersed ingredient, or a dispersoid having metal-oxygen bonds obtained by hydrolyzing or a partially hydrolyzing a metal alkoxide in the absence of all members selected from the group consisting of an acid, base and dispersion stabilizer. The choice of metal alkoxides listed in para [0043] meets the limitation of "at least three hydrolysable groups". Toki further teaches that the metal compound is mixed with lower than 1 to less than 2 mol of water/mol of metal compound at the temperature lower than -20°C (which is below 0 °C) or 0.5 to less than 1 mol of water/mol of metal compound; [abstract]. These ranges overlap those of the claimed. Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention, to select the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, *In re Malagari*, 182 USPQ 549. Furthermore, the dispersoid is optically transparent and provides the same spectral properties as those of the instant claims; [0040]. In addition, the recited steps of mixing a metal compound of claims 1-2, 13 and 23-24 are considered to be process limitation not affecting the structure of dispersoid. "[E]ven though product-by-process claims are limited by and defined by the process; determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process". (*In re Thorpe*, 227 USPQ 964,966).

Considering claim 15, Toki teaches that metal compound hydrolysis at  $-20^{\circ}\text{C}$  and below; [0055].

Considering claim 23, Toki teaches an Example 11 that reads on the instant claim.

Considering claims 24-25, Toki teaches mixing a metal compound with a 1 to less than 2 mol/mol metal compound amounts of water and organic solvent at room temperature; [claims 33, 37 and 0053]. The organic solvent is a hydrocarbon other than alcohol and alcohol; [0075-0076, Examples 3, 5, 7 and 11].

Considering claims 43-44, Toki teaches a particle diameter or size distribution of 1- to 50 nm, or preferably 1 to 10 nm and, therefore, is considered to be monodispersed. As to spectral transmission recitation, see explanation immediately above. Additionally, the recited steps of dispersing are regarded to be process steps with no impact on structure of dispersoid as claimed.

3. Claims 27- 29 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Toki (6235260). Toki teaches a dispersoid, having metal-oxygen bonds, for example, tin or indium oxide. This dispersoid is obtained by mixing a metal compound having at least three hydrolysable groups. The water is added in divided portions to a metal compound, for instance, examples 27 to 42 teach that in the first step the water is added to the mixed separate solution of water-ethanol; the following step is mixing both metal compound solution and the water-ethanol solution. The temperature is  $-75^{\circ}\text{C}$ , which is below  $0^{\circ}\text{C}$ . This range overlaps that of the instant claim. Alternatively, it would have been obvious to one of

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ordinary skill in the art at the time of the invention, to select the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness. The water is added in the amount of 0.6 mole/mole, which is within the range of the instant application. The step of admixing takes place at the temperature below 0°C; [col. 12, lines 49-58]. However, the recitations of steps of water addition of claims 27-29 are process step limitation that are not considered to provide structural limitations to the product.

***Claim Rejections - 35 USC § 103(a)***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark (48013990) in view of Toki (6235260).

Clark discloses a dispersoid having metal-oxide bonds, obtained by mixing a metal compound having at least three hydrolysable metal-oxide bonds, for example, hydrolyzing aluminum sec-butoxide, with water in a solution diluted with a hydrocarbon solvent other than alcohol for example, MEK, and an alcohol solvent [col. 5, lines 16 - 48]. Clark does not specifically teach a mixture of hydrocarbon solvent, water and alcohol. However, Toki teaches that the solvent used with water can be a mixed solvent and gives a range of possible hydrocarbon and alcohol solvents; [col. 6, lines 28-55 and

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col. 7, line 42-48]. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the hydrocarbon or alcohol solvent of Clark to include a mixed hydrocarbon/alcohol solvent as defined by Toki, to succeed in improvement of the film formation characteristics and formation of a more homogeneous film; [Toki, col. 6, line 53-56] as well as in applying a low-cost, low viscosity solvent; [Clark, col. 5, line 44]. The dispersoid is obtained in the absence of at least one acid, base or stabilizer at room temperature. The given temperature range is between 15°C and 25°C, that is room temperature; [Clark, col.8, line 43].

Considering claim 25, the proportion of aqueous medium to metal compound may be 2 moles/mole; [col.7, line 50]. If aqueous medium is a water-organic composition with water of , for example 99% or less than the proportion of water to metal compound is less than 2 moles/mole but more than 0.5; [col.7, line 38].

5. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clark (48013990) in view of Toki (6235260) as evidenced by Handbook of Chemistry and Physics, 1970-1971, pp. C-290 and C-455. The organic solvents for example, alcohol such as ethanol and hydrocarbon solvent such as acetone are present in the prior art references; [Toki, col. 6, line 34 and col. 7, line 48]. As evidenced by Handbook of Chemistry and Physics the solvents above have unlimited or infinitive solubility in water and each other, see numerals e336, p. C-290 and p1649, p. C-455. Based on aforementioned, the concentration of water of the saturation solubility is regarded to be a concentration of water in the mixtures with unlimited solubility. The concentration of water in the mixed solvent is of between 30 and 50%; [Clark, col. 7, line 40]. This range

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overlaps the range of instant application. It would have been obvious to one of ordinary skill in the art at the time of the invention to have selected the overlapping portion of the ranges disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, *In re Malagari*, 182 USPQ 549.

### ***Response to Arguments***

6. Applicant's arguments filed 07/16/09 have been fully considered.

7. In view of applicant's amendments and arguments, the applicant traverses the rejection of claims 1 and 2 under 35 U.S.C. 102(b) over Japanese Laid-open Patent Application No. 10-298769 A of the Office Action mailed on 05/19/09. These arguments and amendments have been found convincing, therefore the rejection of claims 1 and 2 is withdrawn.

8. In view of applicant's amendments and arguments, the applicant traverses the rejection of claims 1, 2 and 13, 14, 15, 23, 27, 28 and 29 under 35 U.S.C. 102(b) over Toki (6235260). The rejection of claims 1-2, 13-15 and 23 is withdrawn. However, the new limitation of claims 27-29 requires the absence of at least one an acid, a base or a dispersion stabilizer and the Toki reference meets the new limitation . Therefore, the rejection of claims 27-29 over Toki (6235260) is maintained.

9. In view of applicant's amendments and arguments, the applicant traverses the rejection of claims 43-44 under 35 U.S.C. 102(b) over Clark (48013990). The amendments and arguments have been found persuasive; therefore the rejection of claims 43-44 is withdrawn.



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10. In view of applicant's amendments and arguments, the applicant traverses the rejection of claims 24-25 under 35 U.S.C. 103(a) over Clark (48013990)/Toki (6235260) and claim 26 over Clark (48013990)/Toki (6235260) as evidenced by Handbook of Chemistry and Physics, 1970-1971, pp. C-290 and C-455. The applicant states that Clark uses a stabilizer and Toki uses an acid, which is absent in the instant claim. However, the instant claims requires an absence of at least one of three listed compounds, not necessary a stabilizer or acid, it can be a base which is not present there; therefore, the references satisfy the limitation above. Furthermore, the applicant argues that Toki does not teach a combination of alcohol and hydrocarbon. However, Toki teaches a list of available solvents including alcohols available for solutions and further teaches that an additional hydrocarbon can be also added to the solution. Additionally, in response to applicant's arguments that Toki adds acid, and does not teach a combination of alcohol/hydrocarbon, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Consequently, Clark suggests a preferred combination of water and alcohol, and Toki teaches a combination of solvents. Accordingly, for the reason stated above, the rejection of claims 24-26 is maintained.

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vera Katz whose telephone number is (571)270-7082. The examiner can normally be reached on M - Th 8-5.

12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JENNIFER McNEIL can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Vera Katz/  
Examiner, Art Unit 1794

/JENNIFER MCNEIL/  
Supervisory Patent Examiner, Art Unit 1794